

Transport Stream Analysis

A Transport Stream packet is a fixed length packet, there are a few Transport Stream packet sizes to be aware of:

- 188 Transport Stream
- 192 Transport Stream + 4 bit Timecode (MT2S Blu Ray)
- 204 Transport Stream + FEC (DVB-T/C/S)
- 208 Transport Stream + FEC (ATSC 8-VSB, 208)
- 208 Transport Stream + Reed Solomon (ATSC)

Transport Stream Packets are the basic units of a Transport Stream, each TS packet starts with a Sync Byte (0x47) and this is used to identify each packet (so 0x47 shouldn't be used elsewhere in the packet).

Each TS packet has a 32 bit header, shown below.

TS Error transport priorityscramblingcc counter

01000111000111111111111100011001 = 32 Bit TS Header

sync bytestart indicatorPIDadaptation field exist

The TS Header above (also called the TS 4 Byte Prefix) is from a real TS packet, below is the TS header in Hex.

TS HeaderAdaptation Field / Payload Data

47 1F FF 19 45 72 69 63 73 73 6F 6E 20 4D 58 38

Name	Bits	Bin	Hex	Dec	Description
Sync Byte	8	01000111	0x47		Sync Byte
TS Error	1	0	0x00		Error indicator (0=No Error, 1=Error)
Start Indicator	1	0	0x00		1 means start of PES or PSI otherwise 0
Transport Priority	1	0	0x00		see table below
PID	13	111111111111	1FFF	8191	PID is 8191 (1FFF) = stuffing packet
Scrambling	2	00	0x00		00 = not scrambled
Adaptation Field Exist	2	01	0x01		01 means no adaptation fields
CC Counter	4	1001	0x09		continuity counter
Total	32				

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